

## A New Psychid Species of *Bacotia* from Japan (Lepidoptera)

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The genus *Bacotia* was erected by TUTT (1899) for a single European species, *Fumea sepium* SPEYER. DIERL (1966) described a second species of this genus, *B. nepalica* DIERL, from Nepal. No further species have been known in the world. In this paper I will describe a third species from Japan, with brief notes on biology.

### *Bacotia* TUTT

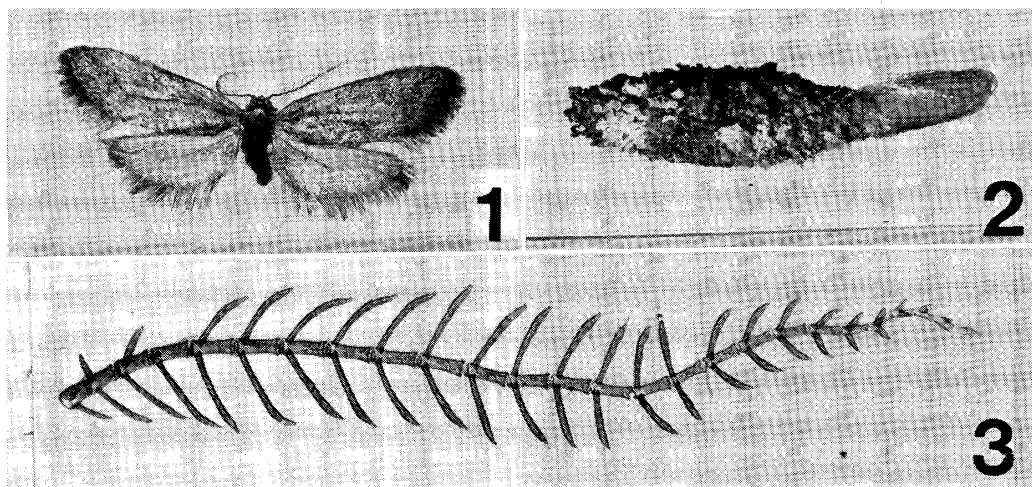
*Bacotia* TUTT, 1899, Entomologist's Rec. J. Var., 11: 207. Type-species: *Fumea sepium* SPEYER, 1846.

### *Bacotia sakabei* sp. n.

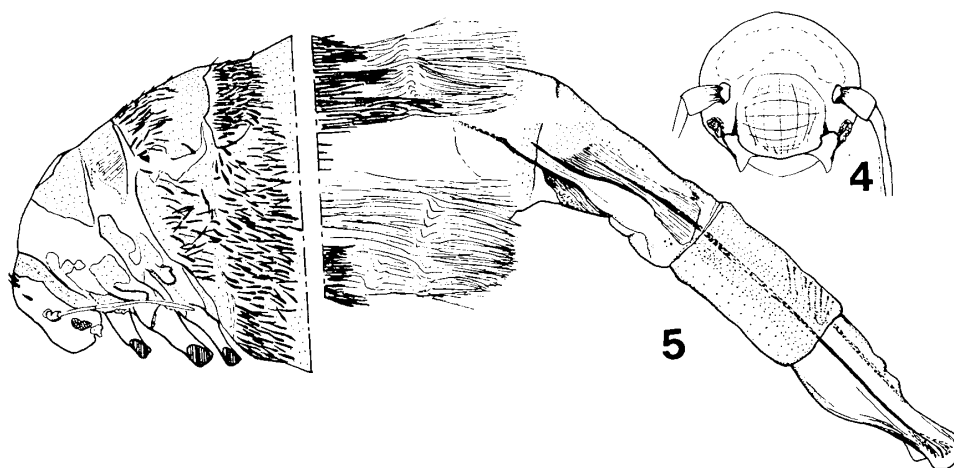
*Bacotia* sp.: YANO, 1958, Publs ent. Lab. Univ. Osaka Prefect., 4: 30.

**Male** (Fig. 1). Length of forewing 6–7 mm (including fringe), wing expanse 12.5–13.0 mm. Body brownish fuscous. Antenna (Fig. 3) bipectinate with 21 to 27 segments, averaging 25; pectinations gradually decreasing in length to apex and arising from base of each segment; sensory hairs erect, fine. Vertex and frontal part of head with long brownish tuft of hair-like scales. Eye round, convex with indefinite brown pattern; ocelli absent. Labial palpus 2 segments. Epiphysis well developed, extending slightly beyond apex of fore tibia; midtibia with a single pair of elongate apical spurs; hindtibia longer and wider than midtibia, with two pairs of pointed spurs at apex and at the distal 1/3 on it respectively (Fig. 7). Forewing dark fuscous to blackish brown, almost lanceolate, relatively narrow, elongate, apex rather acutely pointed, outer margin much oblique; 11-veined, all veins normally arising separate from the discoidal cell;  $R_1$  from almost half its length;  $R_3$  and  $R_4$  close together at the base;  $M_2$  and  $M_3$  completely fused; CuP reduced, nearly straight; Media single in discoidal cell; an accessory cell cut off at upper angle of discoidal cell by the stem of  $R_4$ . Hindwing paler in color, grayish brown; 7-veined, all veins separate; a short crossvein present between Rs and  $M_1$  at apex of cell;  $M_2$  and  $M_3$  completely fused; 1A+2A closely approximate to CuP at basal one-half, then curving apart and ending in a point equidistant from CuP and 3A on termen; intercalary cell absent. Genitalia (Figs. 9, 10): Tegumen hood-shaped with a central cleft, apices hook-like. Vinculum developed, gradually tapering anteriorly to form a moderately long, slender saccus. Apex of valva divided approximately one-half its length; cucullus relatively slender with short hair, smoothly round apically; apex of sacculus minutely spined. Aedeagus simple.

**Female.** Somewhat similar to the species of *Psyche*. Length of body 3–5.5 mm from head to apex of anal hair tuft. Head projecting (Fig. 4). Antenna filiform, 0.2–0.5 mm, segmentation obscure. Eye situated below the base of the antenna. Wings



Figs. 1-3. *Bacotia sakabei* n. sp. — 1. Male, paratype. — 2. Larval case, male.  
— 3. Antenna, male.

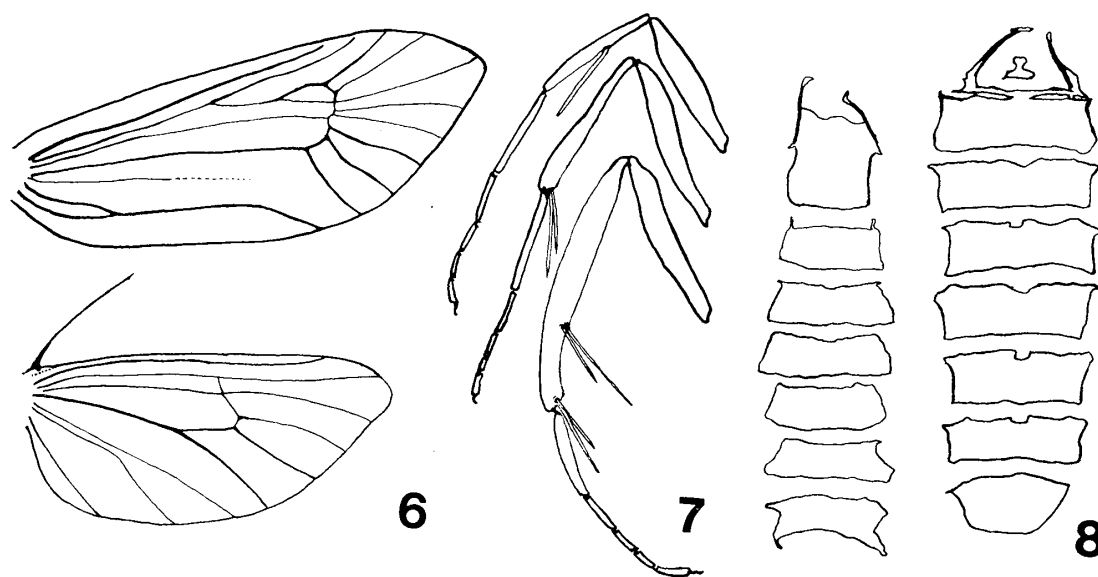


Figs. 4-5. Female of *Bacotia sakabei* n. sp. — 4. Head, frontal aspect. — 5. Body lateral aspect.

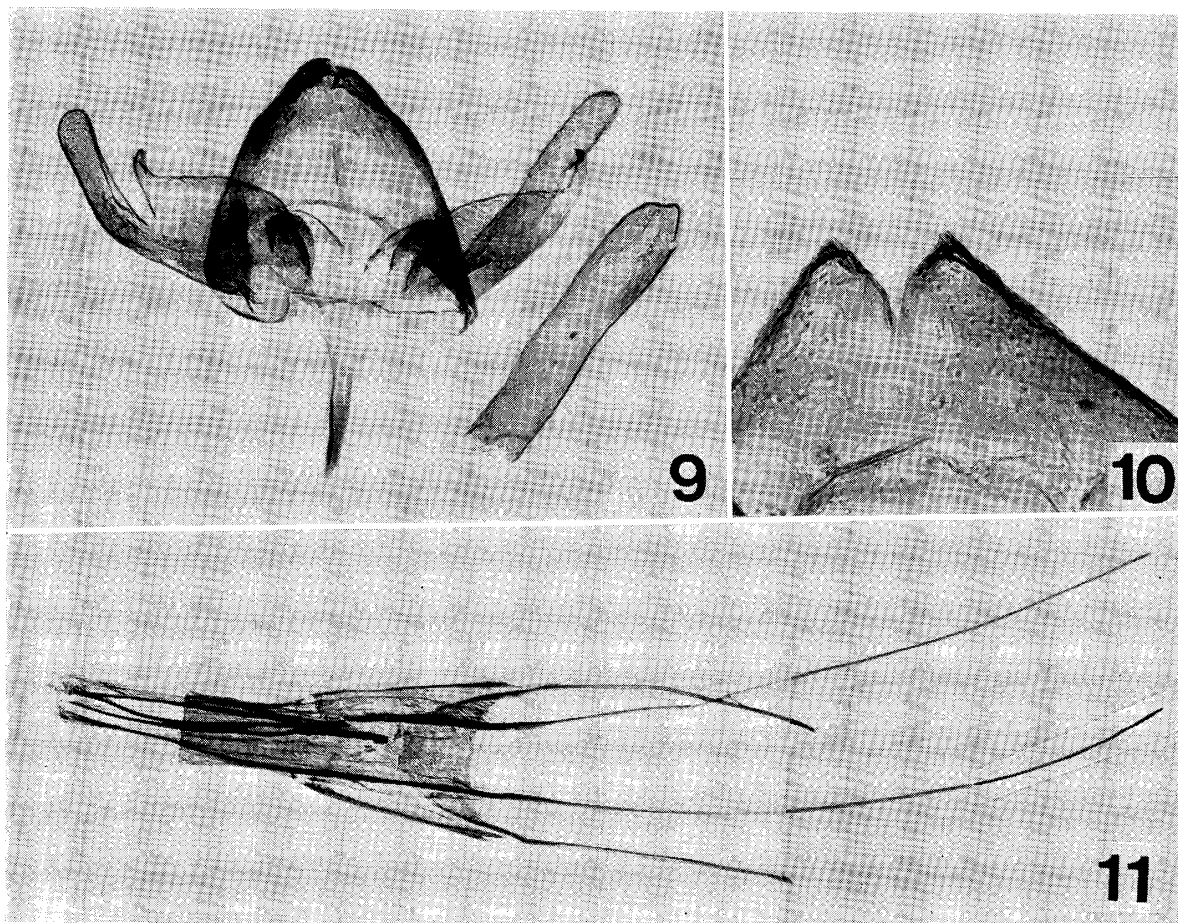
rudimental, membranous; forewing an elongate lobe in shape, hanging; hindwing minute flap-like. Legs well developed, relatively long and strongly sclerotized, tarsi 4-segmented. Anal hair tuft on 7th abdominal segment dense, yellowish brown. Genitalia as illustrated (Fig. 11).

*Larval case* (Fig. 2). Dumpy cigar-shaped, 5-6 mm in length and 2.5 mm in diameter. Exterior of case pale greenish gray to gray, densely covered with minute, granular fragments of lichen and bark material, occasionally with a few larger particles attached.

*Type material*. Holotype: ♂ with case, Mie Pref., Taki, Ôka, emerged Nov. 7, 1976 (M. SAKABE) reared by A. SEINO. To be deposited in the collection of National Science Museum (Nat. Hist.), Tokyo. Paratypes. Niigata Pref., Niigata, Gakkôchô, 2 ♂, Nov. 6, 1958 (S. SAKURAI); same locality as holotype, ♂, emerged Nov. 10, 1976; 3 ♀, Nov. 15, 1976; ♂, Nov. 20, 1976 (M. SAKABE) reared by A. SEINO; Shiga Pref., Hino,



Figs. 6-8. Male of *Bacotia sakabei* n. sp. — 6. Wing venation. — 7. Legs, scales removed. — 8. Sclerotization of sternites (left) and tergites (right).



Figs. 9-11. Genitalia of *Bacotia sakabei* n. sp. — 9. Male. — 10. Apical cleft of tegumen. — 11. Female.

Kitahara, ♂ with case, Oct. 3, 1976 (O. TOMINAGA) reared by A. SEINO; Fukuoka Pref., Okagaki, Kaizôji, ♂ with case, Nov. 15, 1977 (O. TOMINAGA) reared by A. SEINO.

*Other material examined.* Honshu—Fukushima Pref.: Aizu-Wakamatsu, 4 cases, Feb. 25, 1979 (A. SEINO). Saitama Pref.: Hannô, Yugate, 3 cases, Feb. 5, 1976 (K. ICHIKAWA); Moroyama, Tsuchiyama, 18 cases, Apr. 5, 1976 (K. ICHIKAWA). Kanagawa Pref.: Kitakamakura, 9 cases, March 22, 1974 (A. SEINO). Fukui Pref.: Imajyô, 3 cases, March 23, 1975 (O. TOMINAGA). Aichi Pref.: Toyoake, Kutsukake, 1 case, Dec. 13, 1975 (O. TOMINAGA). Mie Pref.: Nabari, Kamiyanagaki, 1 case, Jan. 29, 1974 (O. TOMINAGA); Ueno, Hokke, 1 case, Jan. 4, 1974 (O. TOMINAGA); same locality as holotype, 2 ♂, emerged Nov. 9–10, 1976 (M. SAKABE) reared by A. SEINO. Shiga Pref.: Shiga, Kitahara, 2 cases, Nov. 23, 1975 (O. TOMINAGA); Ôtsu, Tagamikurotsu, 2 cases, Feb. 22, 1976 (O. TOMINAGA); Minakuchi, Matsuo, 1 case, Jan. 15, 1974 (O. TOMINAGA). Osaka Pref.: Kishiwada, Ushitaki, 1 case, Aug. 19, 1976 (O. TOMINAGA). Hyogo Pref.: Toyooka, Takaya, 10 cases, March 16, 1975 (O. TOMINAGA); 3 cases, March 16, 1976 (O. TOMINAGA); Fukuzaki, Yamazaki, 2 cases, March 18, 1974 (O. TOMINAGA); Kobe, Suma, 1 case, Nov. 23, 1973 (O. TOMINAGA). Nara Pref.: Nara, Tawara, 4 cases, Feb. 16, 1975 (O. TOMINAGA); 3 cases, Dec. 20, 1975 (O. TOMINAGA); Nara, Nakanogawa, 3 cases, Feb. 23, 1975 (O. TOMINAGA); Nara, Shimosakawa, 2 cases, Jan. 26, 1975 (O. TOMINAGA); Tenri, Nagara, 1 case, Dec. 9, 1975 (O. TOMINAGA); Murou, Ono, 6 cases, Dec. 28, 1973 (O. TOMINAGA); Haibara, Himakikô, 1 case, Apr. 20, 1975 (O. TOMINAGA); Ôuda, Iwashimizu, 30 cases, Dec. 30, 1973 (O. TOMINAGA); Goshô, Minami, 15 cases, Feb. 9, 1976 (K. TANI); Goshô, Kamogamiue, 5 cases, May 11, 1975 (K. TANI); Gojô, Kojima, 9 cases, March 1, 1976 (K. TANI). Hiroshima Pref.: Miyoshi, Nakahara, 1 case, Dec. 29, 1975 (O. TOMINAGA). Yamaguchi Pref.: Yamaguchi, Hiiragi, 1 case, May 5, 1978 (K. TANI & Y. NISHIKAWA). Shikoku—Tokushima Pref.: Higashi-Iyayama, Kyojô, 1 case, Dec. 29, 1974 (O. TOMINAGA). Ehime Pref.: Tamagawa, Nibukawa, 3 cases, Nov. 20, 1976 (O. TOMINAGA). Kochi Pref.: Nanabeshi, Myoga, 1 case, Dec. 31, 1974 (O. TOMINAGA). Kyushu—Fukuoka Pref.: Ômuta, 1 case, June 15, 1977 (T. SATA); Okagaki, Kaizôji, 5 larvae (in alcohol) & 1 case, Sept. 15, 1977 (O. TOMINAGA). Saga Pref.: Chinzei, Shobu, 4 cases, Dec. 25, 1977 (O. TOMINAGA). Nagasaki Pref.: Hirado, Hiradoshima, 1 case, May 20, 1976 (K. TANI). Sado Is.—Ogi, Kobie, 2 cases, May 18, 1975 (A. SEINO). Tsushima Is.—Izuhara, 1 larval (in alcohol) & 1 case, July 4–5, 1976 (O. TOMINAGA).

*Distribution.* Japan: Honshu, Shikoku, Kyushu, Sado Is., Tsushima Is.

*Biology.* Moth appears from end of October to early December. At emergence, adult female entirely escapes from the case and copulates on it. Pairing posture is as illustrated (Fig. 12). After copulation, female inserts her ovipositor into the case, and lays a cluster of ova in the exuviae remained inside the case. The ova overwinters. Larva grows up slowly May to September. Cases are found commonly on trunk of various trees, old stone monuments, fences or walls near the ground, where the surface is covered with crustose lichens on which the larva feeds.

*Diagnosis.* This new species is very closely related to *B. sepium* and *nepalica* in its superficial and male genitalic structure. The differences of appearing season of moth are very distinct among species, as *sepium* is stated to occur in June to early July in Europe and *nepalica* in August in Nepal. *Sakabei* is a fairly autumnal moth.

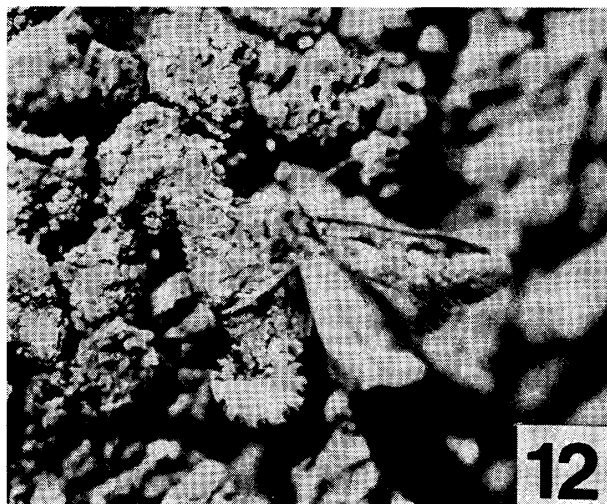


Fig. 12. Paring posture on a trunk of *Prunus* sp., photo by OKADA.

In *sakabei*, the apex of forewing is not so roundish as in other species but rather acutely pointed. Veins 1A+2A of hindwing is not so straight as in other species and running close to CuP from base to middle. Cucullus of male genitalia is not clothed with dense hair found in *sepium* (KOZHANCHIKOV, 1956: 183). This new species may also be distinguished in the larger expanse of wing and more segmented antenna from *nepalica*, in which expanse measures 10.4–10.8 mm and number of antennal segments is 20 to 21 (DIERL, 1966).

*Notes.* The present new species has been recognized by some of lepidopterists and field workers in Japan since the 1950's. YANO (1958) described already moth and immature stages with full illustration under the name of *Bacotia* sp. SAKABE and his collaborators have continued to trace its biology in the Mie district during these ten years.

### Acknowledgement

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### References

- DIERL, W., 1966. Psychidae (Lep.) aus Nepal. *Ergebn. Forsch.-Unternehmen Nepal Himalaya*, **1**: 322–344.  
 KOZHANCHIKOV, I. V., 1956. Psychidae. *Fauna SSSR (Insecta-Lepidoptera)*, **3** (2): 1–516.  
 YANO, K., 1958. Studies on the bagworm moths of Kinki district (Lepidoptera, Psychidae). *Publs ent. Lab. Univ. Osaka Prefect.*, **4**: 25–39.